Reflection on Mistakes in the Workplace

Presenters: Stefanie Kipfmüller, Martin Gartmeier, Hans Gruber and Helmut Heid
Affiliation: Institute for Education, University of Regensburg
Contact: workplace.learning@paedagogik.uni-r.de
Supported by the German Science Foundation (DFG)

1. Abstract

The aim of the research is to assess the potential of reflection on mistakes for the development of professional competence. It is supposed that reflection on mistakes instigates learning processes and positively influences the development of professional competence in situations and contexts that lack opportunities for formal learning. The study assesses 70 customer consultants from the German banking sector. In addition to questionnaires, a case study was developed which allows the observation of subjects during simulated work situations. The results are supposed to show the crucial role of reflection for learning in the workplace and illustrate the importance of a supportive social environment for the individual ability and willingness to reflect on mistakes.

2. Theoretical Framework

Learning from mistakes

Conceptions of workplace learning incorporate the idea of working and learning being intermingled in dynamic work contexts (Bergmann, 1996; Billet, 2001, 2006; Sonntag, 2000). One way to learn at the workplace is to regard errors happening in daily work processes as opportunities for learning. Despite a variety of authors stressing out the importance of a learning oriented way of coping with errors at the workplace (Bauer, Festner, Harteis, Heid, Gruber, 2004 & Cannon & Edmondson, 2005), there is still a lack of empirical evidence on strategies and potentials of such behaviour.

In the theory of ‘negative knowledge’ (Oser et.al. 1999), errors play a crucial role in building up knowledge about how something cannot be done or is not conditioned. This negative knowledge accomplishes a consolidating and protective function, not necessarily through guiding to the right solution, but through helping to avoid wrong actions. Being a form of learning from own or from others’ experience, failures help to “experience limitations and to prevent errors from being repeated” (Oser et al., 1999, p. 12). As error making does not automatically lead to learning processes, it seems necessary to identify characteristics of errors that provide learning potential. Reason (1994) separated slips and lapses, that are caused by inattentiveness or sluttery, from mistakes that happen because of the application of a bad rule, the wrong (or non-) application of
a good rule or because of deficiencies in knowledge. Moreover, it seems useful to constrain the conceptions of error to situations where a cause can be identified which lies within the control of the individual (Zapf et. al., 1999).

Given the case of an unexpected, complex and thus in the professional learning context interesting error – how can one fully exploit its learning potential? One assertion of the beforehand mentioned theory of Oser et. al. (1999) is the dependency of the development of negative knowledge upon the reflective analysis of error episodes. This bridges the gap to concepts of reflective learning from experienced episodes which has already been described as an important component of workplace learning (Boud, 1999, 2006).

Reflection on failures depends upon the analysis of possible and supposable causes of the mistake as well as the identification and pondering of alternatives and possibilities for further action. In order to gain practical relevance, the result of the reflective process has to be included in further action.

Professional competence

Concepts of professional competence describe the ability of a person to perform certain tasks independently. Beyond this very general description, there is a vigorous discussion about definitions and specifications of the term. Well-established conceptions of job related competence undertake a subdivision in different aspects of competence which typically contains e.g. methodical competencies, social competencies and a certain body of domain specific, professional knowledge (Frey, 1999; Richter & Bergmann, 2003). Thus, professional competence is generally defined as all human capabilities, skills, line of reasoning and knowledge stocks, which allow a goal-oriented and situational accomplishment of concrete working tasks. These tasks can be both familiar and novel (Kauffeld, Grote, & Frieling, 2003).

For the purpose of the present research, a concept of competence was applied, which covers a broad variety of aspects of professional competence in the banking sector (mainly retail banking).

3. Research questions

The study addresses three main research questions: 1. Is the individual error orientation an appropriate predictor for the extent and quality of reflective processes on mistakes? 2. Is there a difference in the extent and quality of reflective processes on actual, self-made mistakes compared to the extent and quality of reflective processes on others’ or hypothetic mistakes? 3. Is the extent and quality of reflective processes on mistakes positively connected to aspects of professional competence?
4. Methods and sources of data

Empirical data is gathered in course of two studies: a questionnaire study (A) and a case study (B). The sample for both studies consists of 70 customer consultants (retail banking) working in different branch offices of one German bank. The occupational experience of the subjects amounts from 2 to 30 years.

Within the questionnaire study (A), the Error Orientation Questionnaire (A1) (Rybowiak et al., 1999) is applied. It consists of 37 items in 8 scales, of which only 6 were applied (26 items in the scales error competence; learning from errors; error risk taking; error strain; error communication; thinking about errors). To gain subjective data on professional competence, an existing and approved instrument was selected and adapted for the usage in the banking sector: the “Competence-Reflection-Inventory” (A2) (Kauffeld, in Druck). The instrument consists of 80 items covering a broad variety of aspects of professional competence in the banking sector.

Within all questionnaires, a 6-type Likert scale answer format is used.

Within the case study (B), objective assessments of competence (B1) and of reflection on mistakes (B2) are attained through the observation of subjects’ in a simulated work situation and subsequent reflection. Therefore, actors were trained to perform the role of bank customers. The actors are explicitly advised to bring a variety of elements into the conversation that challenge the subjects’ ability to analyze problems quickly and opt for a way of further proceeding spontaneously. The simulation takes place in the working environment of the customer consultants and is recorded on video tapes. After the simulated customer interaction, subjects’ are asked to give a spontaneous and open report of their experiences during the simulated customer conversation (open reflection). Hereupon, the subjects are, depending on their own proceeding, confronted with an expert solution or with typical mistakes during the subtasks. That information was developed beforehand in cooperation with banking experts. Reflective processes emerge from the comparison between given and own solution. The videotaped case study sessions are transcribed and content analyses are made on the basis of the following categories (Mayring, 1983).

a) Open reflection:
   a1) Extent and amount of statements (duration of session, number of statements);
   a2) Identification of critical situations within the task
   a3) Self-reflective analysis of own behaviour (expression of own perspective and coherence and quality of argumentative underpinning of the perspective)

b) Guided reflection with usage of optimal solutions and typical mistakes; two general cases:
   b1) Fulfilment of the optimal solution: Reflection of typical mistakes, that others made in the situation in contrast to the own solution.
b2) Deviation from the optimal solution: Reflection on own mistakes in contrast to the optimal solution.

The measure of competence is derived from the closeness of the subjects’ performance to the optimal solution.

5. First results and conclusions

First results indicate the following:

1. Is the individual error orientation an appropriate indicator for the extent and quality of reflective processes on mistakes?

First analyses of the data indicate correlations between specific scales of the Error Orientation Questionnaire and the extent of reflection on mistakes. Namely, the scales error communication and thinking about errors seem to be good predictors for differentiated reflection, which is very plausible from a theoretical point of view.

2. Is there a difference in the extent and quality of reflective processes on actual, self-made mistakes compared to the extent and quality of reflective processes on others’ or hypothetic mistakes?

We expected reflection on own mistakes to be more elaborate than reflection on others’ or hypothetic mistakes due to a stronger emotional and cognitive involvement in the incidents. Instead of that, initial, comparative analyses of the data indicate a contrary picture: subjects tended to utter quantitatively more as well as more differentiated analytic statements on hypothetical mistakes than on their own misconducts.

Different explanations could account for this phenomenon, e.g. the rather restrictive and error-avoidant culture in the banking context or the impediment of readiness and ability to reflect on mistakes due to the own emotional involvement in the episode. From a workplace learning point of view, the result supports the importance and potential of the professional community supporting the individual reflection of mistakes.

3. Is the extent and quality of reflective processes on mistakes positively connected to professional competence?

In the existing data, a positive correlation is found between the extent and the quality of reflection on mistakes and different aspects of professional competence (e.g. problem-solving competence, methodical competence, e.g. goal-orientation, and communication). That indicates that subjects with a well developed readiness and ability to interact with their social environment profit in terms of their capacity to perform critical analyses of mistakes. This provides further
affirmation of the beforehand stated hypothesis that the social context is of crucial relevance when it comes to coping with errors at the workplace.

References


Boud, D. J. (1999). Experience and learning: Reflection at work. Deakin: Deakin University, Faculty of Education


